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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,546	10/17/2003	John J. Breen	16356.825 (DC-05310)	1162

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EXAMINER	
YANCHUS III, PAUL B	
ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/688,546	BREEN ET AL.	
	Examiner	Art Unit	
	Paul B. Yanchus	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/17/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art [AAPA], in view of Horigan et al., US Patent no. 6,304,978 [Horigan].

AAPA discloses a method of operating an information handling system (IHS) including a processor, the method comprising:

determining if a power adapter or a battery is supplying power to the IHS [paragraph 0005];

monitoring the output current of the power adapter if the power adapter is supplying power to the IHS [paragraph 0005];

monitoring the output current of the battery if the battery is supplying power to the IHS [paragraph 0005];

reducing the frequency at which the processor operates if the power output of the power adapter exceeds a first threshold current level [paragraph 0005]; and

reducing the frequency at which the processor operates if the power output of the battery exceeds a second threshold current level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the power adapter or battery. Horigan discloses throttling the speed of a processor in the event that a rate of change

in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for abrupt or sharp changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from either the power adapter or battery in order to allow for use of power adapters or batteries with less stringent design constraints by controlling abrupt or sharp changes in current drawn from the power adapter or battery [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claims 2 and 3, the first and second threshold values described in the prior art are inherently one of either the same level or different levels. Applicant claims reciting that the first and second threshold values are the same (claim 2) and that the first and second threshold values are different (claim 3) is construed to be an admission that the criticality does not reside in whether the first and second threshold values are the same or different and hence are obvious variations of one another.

Regarding claims 4 and 5, AAPA and Horigan, as described above, disclose continuously monitoring the output current of the power adapter if the power adapter is supplying power to the IHS. Horigan discloses setting the threshold in order to compensate for the power adapter [power supply] output rating [limited ability of the power supply to increase the amount of current supplied in a given period of time, column 3, lines 15-20].

Regarding claims 6 and 7, AAPA and Horigan, as described above, disclose continuously monitoring the output current of the battery if the battery is supplying power to the IHS. Horigan discloses setting the threshold in order to compensate for the battery [power supply] output rating

[limited ability of the power supply to increase the amount of current supplied in a given period of time, column 3, lines 15-20].

Regarding claim 8, AAPA discloses a method of operating an information handling system (IHS) including a processor, the method comprising:

determining if a power adapter or a battery is supplying power to the IHS [paragraph 0005];

monitoring the output current of the power adapter if the power adapter is supplying power to the IHS [paragraph 0005];

monitoring the output current of the battery if the battery is supplying power to the IHS [paragraph 0005]; and

reducing the frequency at which the processor operates if the power output of the power adapter exceeds a predetermined threshold current level or the power output of the battery exceeds the predetermined threshold current level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the power adapter or battery. Horigan discloses throttling the speed of a processor in the event that a rate of change in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for abrupt or sharp changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from either the power adapter or battery in order to allow for use of power adapters or batteries with less stringent design constraints by

controlling abrupt or sharp changes in current drawn from the power adapter or battery [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claims 9 and 10, AAPA and Horigan, as described above, disclose continuously monitoring the output current of the battery if the battery is supplying power to the HIS and monitoring the output current of the power adapter if the power adapter is supplying power to the IHS. Horigan discloses setting the threshold in order to compensate for the power adapter or battery [power supply] output rating [limited ability of the power supply to increase the amount of current supplied in a given period of time, column 3, lines 15-20].

Regarding claim 11, AAPA discloses a method of operating an information handling system (IHS) including a processor, the method comprising:

monitoring the output current of a power adapter which supplies power to the HIS [paragraph 0005]; and

reducing the frequency at which the processor operates if the power output of the power adapter exceeds a first threshold current level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the power adapter. Horigan discloses throttling the speed of a processor in the event that a rate of change in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for abrupt or sharp changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from the power adapter in order to allow for use of power adapters with less stringent design constraints by controlling abrupt or sharp

changes in current drawn from the power adapter [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claim 12, AAPA discloses a method of operating an information handling system (IHS) including a processor, the method comprising:

monitoring the output current of a battery which supplies power to the HIS [paragraph 0005]; and

reducing the frequency at which the processor operates if the power output of the battery exceeds a first threshold current level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the power adapter. Horigan discloses throttling the speed of a processor in the event that a rate of change in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for abrupt or sharp changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from the battery in order to allow for use of batteries with less stringent design constraints by controlling abrupt or sharp changes in current drawn from the battery [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claim 13, AAPA discloses an information handling system (IHS) comprising:

a processor [paragraphs 0002 and 0005];

a memory coupled to the processor [paragraph 0002];

an AC adapter and a battery for supplying power to the HIS [paragraph 0005]; and

a power control circuit, coupled to the AC adapter and the battery, for reducing the frequency at which the processor operates if the power output of either the AC adapter or the battery exceeds a predetermined threshold level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the AC adapter or battery so that the processor frequency is reduced if the AC adapter or battery instantaneously exceeds the threshold. Horigan discloses throttling the speed of a processor in the event that a rate of change in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for instantaneous [abrupt or sharp] changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from the adapter or battery in order to allow for use of adapters or batteries with less stringent design constraints by accounting for abrupt or sharp changes in current drawn from the adapter or battery [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claims 14 and 15, Horigan discloses setting the threshold in order to compensate for the power supply output rating [limited ability of the power supply to increase the amount of current supplied in a given period of time, column 3, lines 15-20]. Horigan is silent as to how the power supply output rating is acquired. However, receiving identification signals from AC adapters and batteries to determine operating information is well known in the art and it would have been obvious to one of ordinary skill in the art to acquire the AC adapter and battery output rating from identification signals received from the AC adapter and battery.

Regarding claim 16, AAPA discloses that the processor includes a control pin for controlling the frequency at which the processor operates [paragraph 0005].

Regarding claim 17, AAPA discloses an information handling system (IHS) comprising:

a processor [paragraphs 0002 and 0005];

a memory coupled to the processor [paragraph 0002];

an AC adapter for supplying power to the HIS [paragraph 0005]; and

a power control circuit, coupled to the AC adapter, for reducing the frequency at which the processor operates if the power output of the AC adapter exceeds a predetermined threshold level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the AC adapter so that the processor frequency is reduced if the AC adapter instantaneously exceeds the threshold. Horigan discloses throttling the speed of a processor in the event that a rate of change in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for instantaneous [abrupt or sharp] changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from the adapter in order to allow for use of adapters with less stringent design constraints by accounting for abrupt or sharp changes in current drawn from the adapter [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claim 18, Horigan discloses setting the threshold in order to compensate for the power supply output rating [limited ability of the power supply to increase the amount of current supplied in a given period of time, column 3, lines 15-20]. Horigan is silent as to how

the power supply output rating is acquired. However, receiving identification signals from AC adapters to determine operating information is well known in the art and it would have been obvious to one of ordinary skill in the art to acquire the AC adapter output rating from identification signals received from the AC adapter.

Regarding claim 19, AAPA discloses that the processor includes a control pin for controlling the frequency at which the processor operates [paragraph 0005].

Regarding claim 20, AAPA discloses an information handling system (IHS) comprising:

a processor [paragraphs 0002 and 0005];

a memory coupled to the processor [paragraph 0002];

a battery for supplying power to the HIS [paragraph 0005]; and

a power control circuit, coupled to the battery, for reducing the frequency at which the processor operates if the power output of the battery exceeds a predetermined threshold level [paragraph 0005].

AAPA does not disclose continuously monitoring the output current of the battery so that the processor frequency is reduced if the battery instantaneously exceeds the threshold. Horigan discloses throttling the speed of a processor in the event that a rate of change in current drawn from a power supply exceeds a threshold [column 5, lines 35-45]. The current sensor monitors the current continuously to be able to account for instantaneous [abrupt or sharp] changes in current drawn from the power supply [column 2, lines 42-52 and column 5, line 664 – column 6, line 5]. It would have been obvious to one of ordinary skill in the art to modify the AAPA method to continuously monitor the output current from the battery in order to allow for use of

batteries with less stringent design constraints by accounting for abrupt or sharp changes in current drawn from the battery [column 2, lines 42-55 and column 3, lines 13-24].

Regarding claim 21, Horigan discloses setting the threshold in order to compensate for the power supply output rating [limited ability of the power supply to increase the amount of current supplied in a given period of time, column 3, lines 15-20]. Horigan is silent as to how the power supply output rating is acquired. However, receiving identification signals from batteries to determine operating information is well known in the art and it would have been obvious to one of ordinary skill in the art to acquire the battery output rating from identification signals received from the battery.

Regarding claim 22, AAPA discloses that the processor includes a control pin for controlling the frequency at which the processor operates [paragraph 0005].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kling et al., US Patent no. 6,367,023, discloses measuring current of a power supply and reducing processor power consumption if the current exceeds a threshold.

Klein, US Patent no. 6,182,232, discloses managing power consumption of a processor according to power supply output current.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul B. Yanchus whose telephone number is (571) 272-3678. The examiner can normally be reached on Mon-Thurs 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Yanchus
March 16, 2006

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